

What is claimed is:

1           1.       A method of performing channel hashing in a communication system, the  
2 method comprising a step of:

3           transmitting an overhead message including a list of frequency assignments to at least  
4 one receiving side through a common channel, wherein the overhead message includes a first  
5 field, the first field containing information indicating whether the frequency assignment list  
6 includes at least one frequency assignment allowing packet data support.

1           2.       The method of claim 1, wherein the overhead message of said transmitting  
2 step includes a second field, the second field containing information indicating whether each  
3 frequency assignment in the frequency assignment list allows packet data support.

1           3.       The method of claim 1, wherein the overhead message is an extended CDMA  
2 channel list message.

1           4.       The method of claim 1, wherein the communication system is a base station  
2 and the at least one receiving side is a mobile station.

1           5.       The method of claim 1, wherein the common channel is a forward common  
2 channel.

1           6.       The method of claim 1, wherein the common channel is one selected from  
2 the group consisting of a forward paging channel and a forward broadcast control channel.

1           7.       A method of performing channel hashing in a communication system, the  
2 method comprising steps of:

3           receiving through a common channel an overhead message including a CDMA  
4 channel list containing a plurality of frequency assignments;

5           reading first and second fields of the received overhead message, the first field  
6 containing information indicating whether at least one frequency assignment allowing packet  
7 data support is included in the plurality of frequency assignments and the second field  
8 containing information indicating whether each frequency assignment of the plurality of  
9 frequency assignments allows packet data support;

10          formulating a first subset of channels based on the information of the first and second  
11 fields of the received overhead message; and

12          choosing as a service channel a frequency assignment of the first subset of channels.

1           8.       The method of claim 7, wherein the common channel is a forward common  
2 channel.

1           9.       The method of claim 8, wherein the forward common channel is one selected  
2 from the group consisting of a forward paging channel and a forward broadcast control  
3 channel.

1           10.      The method of claim 7, wherein the overhead message is an extended CDMA  
2 channel list message.

1           11.      The method of claim 7, wherein the first subset of channels is formulated by  
2 removing from the CDMA channel list all frequency assignments that do not allow packet

3 data support, when the information of the first and second fields indicates packet data support.

1 12. The method of claim 11, further comprising steps of:

2 determining whether a base station and a mobile station both provide special system  
3 support;

4 formulating a final subset of channels by removing from the first subset of channels  
5 all frequency assignments that do not allow the special system support, if it is determined that  
6 the base station and mobile station both provide the special system support; and

7 randomly selecting one service frequency assignment from the frequency  
8 assignments of the final subset of channels.

1 13. The method of claim 11, further comprising the steps of:

2 determining whether a base station and a mobile station both provide special system  
3 support; and

4 randomly selecting one service frequency assignment from the frequency  
5 assignments of the first subset of channels, if it determined that one of the base station and the  
6 mobile station does not provide the special system support.

1 14. The method of claim 7, further comprising the steps of:

2 determining whether a base station and a mobile station both provide special system  
3 support, if the information of the first and second fields indicates no packet data support; and

4 randomly selecting one service frequency assignment from the frequency  
5 assignments of the first subset of channels,

6 wherein the first subset of channels is formulated by removing from the frequency  
7 assignment list all frequency assignments that do not provide the special system support, if it

8 is determined that the base station and mobile station both provide the special system support.

1 15. The method of claim 7, further comprising the steps of:  
2 determining whether a base station and a mobile station both provide special system  
3 support, if the information of the first and second fields indicates no packet data support; and  
4 randomly selecting one service frequency assignment from the frequency assignment  
5 list, if it is determined that one of the base station and the mobile station does not provide the  
6 special system support.

1 16. The method of claim 7, wherein the communication system is a mobile  
2 station.

1 17. A method of performing channel hashing in a communication system, the  
2 method comprising steps of:  
3 receiving an overhead message, sent through a forward common channel from a base  
4 station to a mobile station, the overhead message including at least one field and a CDMA  
5 channel list;  
6 determining in the mobile station whether the base station and mobile station both  
7 provide packet data support, based on the at least one field of the received overhead message;  
8 formulating a first subset of channels according to a result of said determining step;  
9 and  
10 randomly selecting one frequency assignment from the first subset of channels.

1 18. The method of claim 17, wherein the overhead message is an extended  
2 CDMA channel list message.

1           19.     The method of claim 17, wherein the first subset of channels is formulated by  
2 removing from the CDMA channel list all frequency assignments that do not allow packet  
3 data support, if the base station and mobile station are both determined to provide packet data  
4 support.

1           20.     The method of claim 19, further comprising the steps of:  
2           determining in the mobile station whether the base station and mobile station both  
3 provide special system support;  
4           formulating a final subset of channels by removing from the first subset of channels  
5 all frequency assignments that do not provide the special system support, if it is determined  
6 that the base station and mobile station both provide the special system support; and  
7           randomly selecting one service frequency assignment from the final subset of  
8 channels.

1           21.     The method of claim 20, wherein the final subset of channels is formulated  
2 by selecting the selected frequency assignments of the first subset of channels if it is  
3 determined that one of the base station and mobile station does not provide the special system  
4 support.

1           22.     The method of claim 17, wherein the at least one field of the received  
2 overhead message includes at least one of a PDCH\_SEL\_INCL field having information  
3 indicating whether at least one frequency assignment allowing packet data support is included  
4 in the received overhead message and a PDCH\_HASH\_IND field having information  
5 indicating whether each frequency assignment of the CDMA channel list allows packet data

6 support.

1 23. The method of claim 22, wherein the PDCH\_SEL\_INCL field and the  
2 PDCH\_HASH\_IND field each have a length of one bit.

1 24. The method of claim 23, wherein, if the PDCH\_SEL\_INCL field is set to a  
2 first binary value, the mobile station determines that the base station provides packet data  
3 support and that the overhead message includes the at least one frequency assignment  
4 allowing packet data support and wherein, if the PDCH\_SEL\_INCL field is set to a second  
5 binary value, the mobile station determines that the base station does not provide packet data  
6 support and that the overhead message does not include the at least one frequency assignment  
7 allowing packet data support.

1 25. The method of claim 17, further comprising steps of:  
2 determining in the mobile station whether the base station and mobile station both  
3 provide special system support, if it is determined that one of the base station and mobile  
4 station does not support the packet data channel;  
5 formulating a final subset of channels by removing from the first subset of channels  
6 all frequency assignments that do not provide special system support, if the base station and  
7 mobile station both provide the special system support; and  
8 choosing as a service channel a frequency assignment of the final subset of channels.

1 26. The method of claim 17, further comprising the steps of:  
2 determining in the mobile station whether the base station and mobile station both  
3 provide special system support, if it is determined that one of the base station and mobile

4 station does not provide packet data support; and  
5 randomly selecting one service frequency assignment from the CDMA channel list, if  
6 it is determined that one of the base station and mobile station does not provide the special  
7 system support.

1 27. The method of claim 17, wherein the forward common channel is one  
2 selected from the group consisting of a forward paging channel and a forward broadcast  
3 control channel.

1 28. An overhead message comprising:  
2 a first field containing information indicating whether a list of frequency assignments  
3 includes at least one frequency assignment allowing packet data support; and  
4 a second field containing information indicating whether each frequency assignment  
5 of the frequency assignment list allows packet data support.

1 29. The overhead message of claim 28, wherein the first field is a  
2 PDCH\_SEL\_INCL field and the second field is a PDCH\_HASH\_IND field.

1 30. The overhead message of claim 29, wherein the PDCH\_SEL\_INCL field and  
2 the PDCH\_HASH\_IND field each have a length of one bit.

1 31. The overhead message of claim 30, wherein the PDCH\_SEL\_INCL field is  
2 set to a first binary value, if the frequency assignment list includes at least one frequency  
3 assignment allowing packet data support, and is otherwise set to a second binary value.

1           32.     The overhead message of claim 30, wherein the PDCH\_HASH\_IND field is  
2     set to a first binary value, if there is at least one frequency assignment allowing packet data  
3     support, and is otherwise set to a second binary value.

1           33.     The overhead message of claim 28, further comprising:  
2             a third field containing information indicating whether the at least one frequency  
3     assignment in the frequency assignment list provides special system support; and  
4             a fourth field containing information indicating whether the each frequency  
5     assignment of the frequency assignment list provides the special system support.

1           34.     The overhead message of claim 33, wherein the third field is an  
2     RC\_QPCH\_SEL\_INCL field and the fourth field is an RC\_QPCH\_HASH\_IND field.

1           35.     The overhead message of claim 34, wherein the RC\_QPCH\_SEL\_INCL field  
2     and the RC\_QPCH\_HASH\_IND field each have a length of one bit.

1           36.     The overhead message of claim 35, wherein the RC\_QPCH\_SEL\_INCL field  
2     is set to a first binary value, if the at least one frequency assignment provides the special  
3     system support, and is otherwise set to a second binary value.

1           37.     The overhead message of claim 35, wherein the RC\_QPCH\_HASH\_IND  
2     field is set to a first binary value, if the each frequency assignment of the frequency  
3     assignment list provides the special system support, and is otherwise set to a second binary  
4     value.



1           38.     The overhead message of claim 28, wherein the overhead message is an  
2     extended CDMA channel list message.